

15 January 1999

**Appendix 23-B****Checklist for Evaluation of Ergonomic Stress in Industrial Shops**

	<u>Yes</u>	<u>No</u>	<u>N/A</u>
1. Physical Stress:			
1.1 Does the job require contact of fingers or wrist with sharp edges?	_____	_____	_____
1.2 Do hand tools or process equipment vibrate the worker's hands, arms, or whole body?	_____	_____	_____
2. Force:			
2.1 Does the job require more than 10 pounds of force?	_____	_____	_____
2.2 Does the job require using a pinch grip (between thumb and finger)?	_____	_____	_____
2.3 Are gloves used, increasing the force needed for motion of the fingers?	_____	_____	_____
2.4 Does the job require frequent heavy lifting (> 18 kg or 40 lb, 2 hours per day)?	_____	_____	_____
2.5 Does the job require occasional very heavy lifting (> 23 kg or 50 lb)?	_____	_____	_____
2.6 Does the job require handling items that are difficult to grasp?	_____	_____	_____
3. Posture:			
3.1 Does the job require flexion or extension (bending up or down) of the wrist?	_____	_____	_____
3.2 Does the job require deviating the wrist side to side (ulnar or radial deviation)?	_____	_____	_____
3.3 Is the worker seated while performing the job?	_____	_____	_____
3.4 Does the job require "clothes wringing" motion?	_____	_____	_____
3.5 Does the job require extended reaches, beyond normal arm reach?	_____	_____	_____
3.6 Does the job require awkward lifts or carries that are near the floor, above the shoulders, or far in front of the body?	_____	_____	_____
3.7 Does the job require exertion of pushing, pulling, lifting, or lowering forces in awkward positions to the side, overhead, or at extended reaches?	_____	_____	_____
3.8 Do workers sit on the front edge of their chairs?	_____	_____	_____
3.9 Is the worker required to maintain the same posture, either sitting or standing, all of the time?	_____	_____	_____

Appendix 23-B

Enclosure (1)

	Yes	No	N/A
4. Workstation hardware:			
4.1 Is the orientation of the work surface non-adjustable?	_____	_____	_____
4.2 Does the work surface appear to be too high or too low for many operators?	_____	_____	_____
4.3 Is the location of the tool non-adjustable?	_____	_____	_____
4.4 Does the job require handling oversized objects that require two-person lifting?	_____	_____	_____
4.5 Is there an absence of material handling aids, such as air hoists and scissors tables?	_____	_____	_____
4.6 Do workers attempt to modify their chairs or work surfaces by adding cushions or pads?	_____	_____	_____
5. Repetitiveness:			
5.1 Does the job require that one motion pattern be repeated at a high frequency?	_____	_____	_____
5.2 Is the cycle time for repetitive operations less than 30 seconds?	_____	_____	_____
5.3 Is the work pace rapid and not under the operator's control?	_____	_____	_____
6. Tool design:			
6.1 Is the handle too large for the thumb and finger to slightly overlap around a closed grip?	_____	_____	_____
6.2 Is the span of the tool's handle less than 5 cm (2 inches)?	_____	_____	_____
6.3 Is the handle of the tool made of metal?	_____	_____	_____
6.4 Is the weight of the tool greater than 10 lbs?	_____	_____	_____
6.5 Are heavy tools lacking devices to suspend some of their weight?	_____	_____	_____
6.6 Does use of the tool require flexion or extension of the wrist (bending up or down)?	_____	_____	_____
6.7 Does the tool require ulnar or radial deviation of the wrist (bending to either side)?	_____	_____	_____
7. Work environment:			
7.1 Are housekeeping practices poor, e.g., aisles cluttered, waste on the floor?	_____	_____	_____
7.2 Are floors uneven or slippery?	_____	_____	_____
7.3 Does the job require frequent (daily) stair or ladder climbing?	_____	_____	_____
7.4 Do the work tasks contain significant visual components, requiring good lighting?	_____	_____	_____
7.5 Does the worker's eye have to move periodically from dark to light areas?	_____	_____	_____

7.6 Is the air temperature uncomfortably hot or cold? \_\_\_\_\_  
Score (count all "yes" answers) \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Prepared by: \_\_\_\_\_ Date: \_\_\_\_\_

Shop/Task Identification: \_\_\_\_\_

Operator's Name: \_\_\_\_\_

Evaluation: When a group of workstations are evaluated using this checklist by the same individual, the workstations with the higher scores should be the ones most likely to cause ergonomic stress. It is not necessary for each workstation to achieve a "zero," or perfect score, on this checklist. Common sense should be used to determine where modifications are necessary, reasonable, and feasible.